Consulting Engineers and Geologists

CONVERSE CONSULTANTS ORANGE COUNTY

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October 25, 1995

Luis Lodrigueza
Hazardous Waste Specialist
Orange County Health Care Agency
2009 East Edinger
Santa Ana, CA 92705

SUBJECT: **Soil Remediation System Progress Report**
Fullerton Business Park North
1551 East Orangethrope Avenue
Fullerton, California
OCHCA Case #94IC29
Converse Project No. 94-42145-01

Dear Mr. Lodrigueza:

Converse Consultants Orange County (Converse), on behalf of Red Eagle Properties, is pleased to submit this progress report documenting the operation of a soil vapor extraction and treatment system at Fullerton Business Park North. The remedial work is being conducted in accordance with the Corrective Action Plan (CAP) dated July 26, 1995, and approved by you in your letter dated July 31, 1995. For site vicinity, see Figure No. 1.

The remediation system initially consisted of a 100 cubic feet per minute (cfm) positive displacement blower with two 1,000-pound granular activated carbon vessels (in series). The system began initial operation on August 15, 1995 by extracting soil vapors from one of the two initially installed vapor wells (extraction wells VE-1 and VE-2 were installed on August 3, 1995). The vapor wells were installed to a depth of 40 feet below ground surface (bgs), with a screened interval between 10 and 40 feet bgs. On September 15, 1995, the 100 cfm blower was replaced with a 200 cfm blower.

The remedial system is permitted with a various locations permit by the South Coast Air Quality Management District (SCAQMD), as applied for by EnviroSupply & Service Inc. (Fountain Valley, California). The system is being used to extract and remediate tetrachloroethene (PCE) soil vapors beneath the former clarifier. The PCE vapors are being adsorbed onto granular activated carbon. This progress report summarizes the remediation progress for the months of August and September 1995.

ACTIVITIES COMPLETED THIS PERIOD (Aug.-Sept. 1995)

The following work was completed during the months of August and September 1995 at the subject site:

* Installation of two (2) vapor extraction wells (VE-1 and VE-2).

* Installation, start up, and monitoring of the vapor extraction system. System monitoring was conducted three times per week, including emissions monitoring for volatile organic compounds (VOCs) from the influent and effluent ports with a flame ionizing organic vapor analyzer.

* Complete granular activated carbon replacement (September 13, 1995).

* Evaluation of the weekly data and preparation of this progress report.

RESULTS OF MONITORING AND SAMPLING

During the operational period between August 15 and September 29, 1995, the vapor extraction system was extracting soil vapors from well VE-1 or VE-2. Soil vapors were extracted from well VE-2 between August 15 and September 25 and from well VE-1 from September 25 to September 29. For extraction well locations, see Figure No. 2.

The extraction flow rate from the two wells ranged from 135 to 275 cfm, depending on the capacity of the extraction blower. The extraction vacuum from each well ranged from 20 to 32 inches of water. The vacuum response, at the air infiltration well, was measured between 4 and 6 inches of water (approximately 10 to 20% of the applied vacuum). The distance between the two extraction/air infiltration wells is approximately 16 feet.

The above remedial system operational data reveals that the subsurface soils are of a relatively high permeability, yielding high extraction flow rates, with a large effective radius of influence (greater than 20 feet from the extraction location).

The extracted concentration of VOCs (influent concentration) ranged between 3,000 and 70 parts per million. The influent VOC sample results are listed in Table 1: Vapor Extraction System Performance. Graph 1 shows the influent VOC concentration vs. operating days.

On September 12, 1995, the VOC concentration at the effluent from the treatment system (sampled after the granular activated carbon) exceeded the SCAQMD permit requirements. A complete change out of both of the granular activated carbon vessels was conducted on September 13, 1995. The spent carbon was placed into 55 gallon drums from temporary on site storage. Pending the carbon profiling data, the carbon will be removed from the property for regeneration. Additional documentation concerning the disposition of the spent carbon will be forwarded with the next progress report.

ACTIVITIES PLANNED FOR OCTOBER 1995

The following work is planned for the October 1995 at the subject site:

* Continued weekly monitoring of the vapor extraction system and VOC concentrations at the influent and effluent ports with an flame ionizing organic vapor analyzer.

* Collection of influent air samples for chemical analyses.

* Continued evaluation of the weekly monitoring data.

If you have any further questions or require additional information, please contact the undersigned at (714) 453-2880.

Sincerely,

CONVERSE CONSULTANTS ORANGE COUNTY

Joseph Radonich
Project Environmental Scientist

Henry B. Ames, R.G.
Senior Geologist

JR/HBA/GSS

Attachments Figure 1: Site Vicinity
Figure 2: Site Plan
Table 1: Vapor Extraction System Performance
Graph 1: Vapor Extraction System Performance

cc: Carl Ross, Red Eagle Properties
Mark Boen, Red Eagle Properties
Augustine Anijielo, Santa Ana Regional Water Quality Control Board
Mr. Gene Rosecrans, Community Bank
Mr. Roger Turner

TABLE 1
Vapor Extraction System Performance
Fullerton Business Park North
Fullerton, California
(Converse Project No. 94-42871-05)

Date	Flow Rate (scfm)	Vapor Extraction Well	Total Operating Days	Influent Conc.* (ppm)	Comments
08/15/95	160	VE-2	0	3,000	Initial Startup
08/16/95	135	VE-2	1	275	--
08/21/95	155	VE-2	6	200	--
08/23/95	155	VE-2	8	220	--
08/25/95	157	VE-2	10	80	--
08/31/95	145	VE-2	16	70	--
09/01/95	145	VE-2	17	70	--
09/05/95	142	VE-2	21	70	--
09/08/95	145	VE-2	24	70	--
09/11/95	150	VE-2	27	350	--
09/13/95	150	VE-2	29	320	Changed extraction blowers and carbon cannisters
09/15/95	270	VE-2	31	350	--
09/18/95	250	VE-2	34	160	--
09/19/95	275	VE-2	35	150	--
09/25/95	275	VE-1	41	225	Blower off upon arrival - restarted (See Note No.1)
09/26/95	270	VE-1	42	225	--
09/29/95	270	VE-1	45	310	--

NOTES:
ppm = parts per million
scfm = standard cubic feet per minute
*Concentrations reported were measured with an Flame Ionizing Orangic Vapor Analyzer calibrated to hexane.

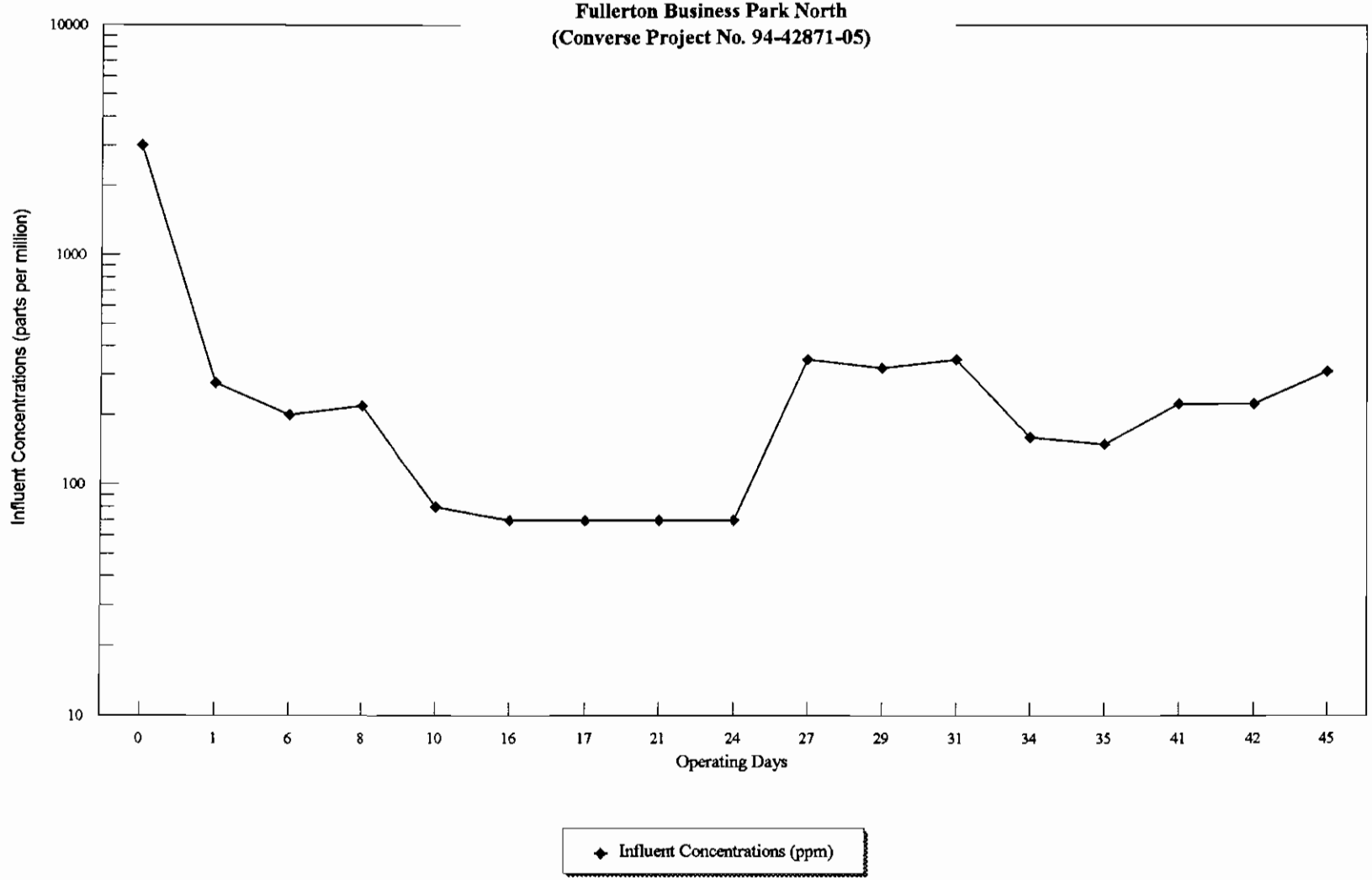
1) Vapor extraction well was changed from VE-2 to VE-1.

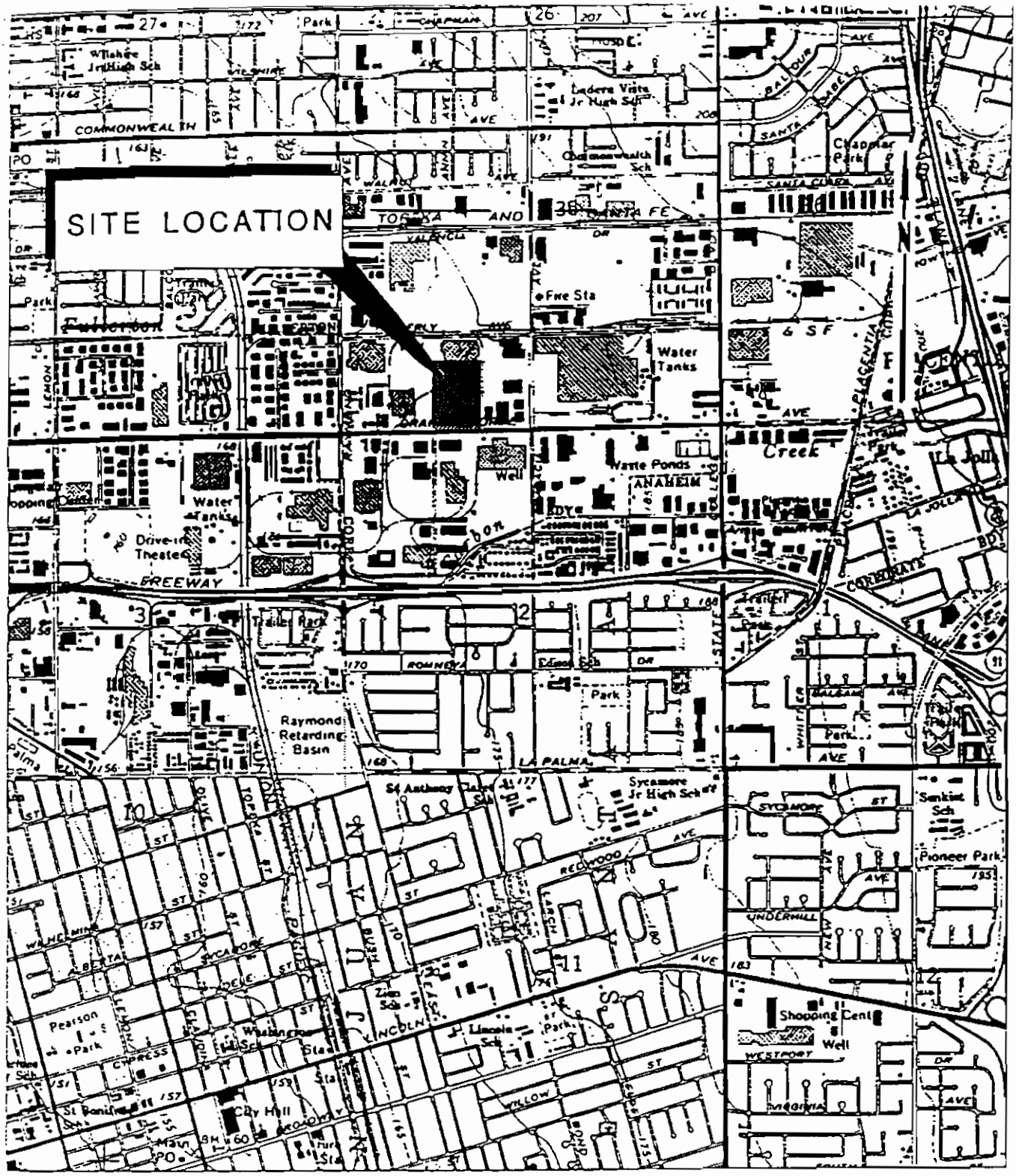
Graph 1

Vapor Extraction System Performance

Fullerton Business Park North

(Converse Project No. 94-42871-05)





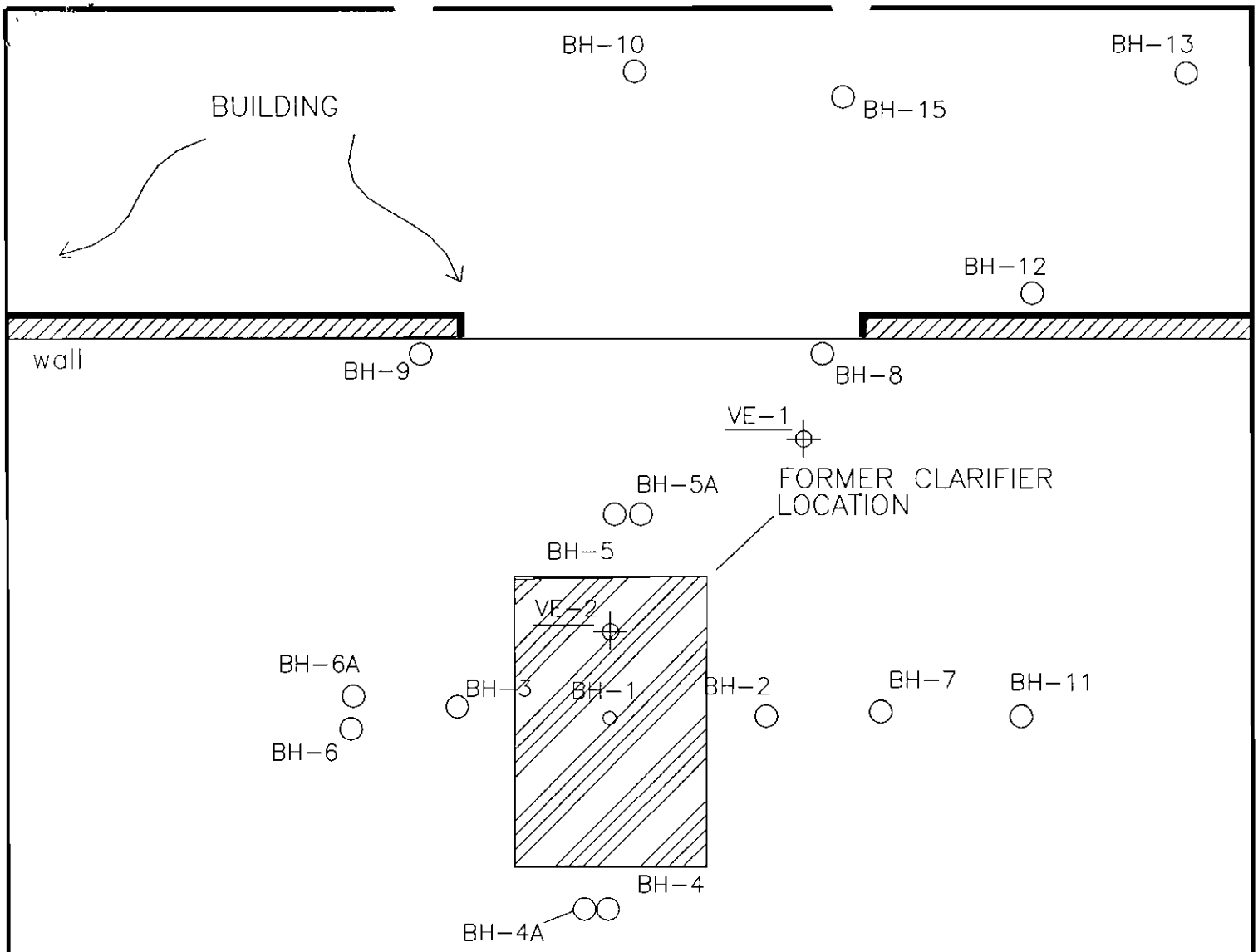
VICINITY MAP

SITE CHARACTERIZATION
1551 East Orangethorpe Avenue
Fullerton, California

Project No.
94-42871-05

Figure No.
1

Converse Consultants Orange County
Geotechnical Engineering and Applied Sciences



LEGEND

VE-2 ⊕ Approximate location of vapor extraction well

BH-14

NOTE:
This figure is part of Converse Consultants Orange County Corrective Action Plan dated July 21, 1995.

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SITE LAYOUT MAP

Fullerton Business Park North
1551 East Orangethorpe Avenue
Fullerton, California

DATE: 10/20/95	PROJECT NO: 94-42871-05	FIGURE NO: 2
SCALE: 1" = 8'	CHECKED BY:	